UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,616	01/13/2004	Rima Kaddurah-Daouk	MBZ-001CN	4792

959 7590 02/07/2005

LAHIVE & COCKFIELD, LLP.
28 STATE STREET
BOSTON, MA 02109

EXAMINER	
CALAMITA, HEATHER	
ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,616	KADDURAH-DAOUK ET AL.	
	Examiner	Art Unit	
	Heather G. Calamita, Ph.D.	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-72* is/are pending in the application.

4a) Of the above claim(s) *66-72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *56-72* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5/24/04; 11/2/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 56-65, drawn to a method for identifying small molecules relevant to a nervous system disorder, classified in class 436, subclass 507.

II. Claims 66 and 67, drawn to a method for metabolomically facilitating the diagnosis of a nervous system disorder, classified in class 514, subclass 2.

III. Claims 68-72, drawn to a method for metabolomically monitoring the effectiveness of a therapeutic agent in clinical trials, classified in class 424, subclass 2.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). The instant specification does not disclose that these methods would be used together. The first method for identifying small molecules relevant to a nervous system disorder (group I) and the second method for metabolomically facilitating the diagnosis of a nervous system disorder (group II) are unrelated as they comprise distinct steps and utilize different products which demonstrates that each method has a different mode of operation. Each invention performs this function using a structurally and functionally divergent material. The first method for identifying small molecules relevant to a nervous system disorder utilizes at least a small molecule profile of someone with a nervous system disorder and identifies molecules relevant to the disorder but does not involve diagnosis of the disorder. The second method for metabolomically facilitating the diagnosis of a nervous system disorder utilizes a small molecule profile to determine a predisposition for developing a nervous system disorder and involves diagnosis of the disorder. Therefore, each method is divergent in

materials and steps. For these reasons the Inventions I an II are patentably distinct. Furthermore, the distinct steps and products require separate and distinct searches. The inventions of Group I and II have a separate status in the art as indicated by their different classifications. As such, it would be burdensome to search the inventions of Groups I and II together.

Inventions I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). The instant specification does not disclose that these methods would be used together. The first method for identifying small molecules relevant to a nervous system disorder (group I) and the third method for metabolomically monitoring the effectiveness of a therapeutic agent in clinical trials (group III) are unrelated as they comprise distinct steps and utilize different products which demonstrates that each method has a different mode of operation. Each invention performs this function using a structurally and functionally divergent material. The first method for identifying small molecules relevant to a nervous system disorder utilizes at least a small molecule profile of someone with a nervous system disorder and identifies molecules relevant to the disorder but does not involve monitoring changes in the small molecule profile or treatment with a therapeutic agent. The third method for metabolomically monitoring the effectiveness of a therapeutic agent in clinical trials involves monitoring changes in the small molecule profile and treatment with a therapeutic agent. Therefore, each method is divergent in materials and steps. For these reasons the Inventions I and III are patentably distinct. Furthermore, the distinct steps and products require separate and distinct searches. The inventions of Group I and III have a separate status in the art as indicated by their different classifications. As such, it would be burdensome to search the inventions of Groups I and III together.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or

different effects (MPEP § 806.04, MPEP § 808.01). The instant specification does not disclose that these methods would be used together. The second method for metabolomically facilitating the diagnosis of a nervous system disorder (group II) and the third method for metabolomically monitoring the effectiveness of a therapeutic agent in clinical trials (group III) are unrelated as they comprise distinct steps and utilize different products which demonstrates that each method has a different mode of operation. Each invention performs this function using a structurally and functionally divergent material. The second method for metabolomically facilitating the diagnosis of a nervous system disorder utilizes a small molecule profile to determine a predisposition for developing a nervous system disorder and involves diagnosis of the disorder but does not involve monitoring changes in the small molecule profile or treatment with a therapeutic agent. The third method for metabolomically monitoring the effectiveness of a therapeutic agent in clinical trials involves monitoring changes in the small molecule profile and treatment with a therapeutic agent. Therefore, each method is divergent in materials and steps. For these reasons the Inventions II and III are patentably distinct. Furthermore, the distinct steps and products require separate and distinct searches. The inventions of Group II and III have a separate status in the art as indicated by their different classifications. As such, it would be burdensome to search the inventions of Groups II and III together.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Elizabeth Hanley on January 28, 2005 a provisional election was made without traverse to prosecute the invention of group I, claims 56-65. Affirmation of this election must be made by applicant in replying to this Office action. Claims 66-72 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

2. Claims 58, 59, 64 and 65 are objected to because of the following informalities: Amyotrophic is misspelled in these claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 58 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 58, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 56-58, 60-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Siman (USPN 5,871,712, 02/16/1999).

Siman teaches (claim 56) a method for identifying small molecules relevant to a nervous system disorder, comprising:

obtaining a small molecule profile of a subject suffering from a nervous system disorder (SEQ ID NOs 1 and 2 comprise 7 amino acids which have the molecular weights of 1004 and 991 Daltons, respectively, and therefore meet the claim limitation of small molecule which is defined in the specification as molecules with a molecular weight of less than 2000 Daltons (see col. 2 lines 1-7); and

comparing the small molecule profile to a standard small molecule profile thereby, identifying the small molecules relevant to said nervous system disorder (see col. 2 lines 8-12, 50-54).

With regard to claim 57, Siman teaches the nervous system disorder is a neurogenerative disorder (see col. 2 lines 50-54). With regard to claim 58, Siman teaches the nervous system disorder is neuropathy, Alzheimer disease, Parkinson's disease, traumatic nerve injury and dementia (see col. 2 lines 55-56, 63-64). With regard to claim 60, Siman teaches the subject is human (see col. 2 line 49). With regard to claim 61, Siman teaches the small molecule profiles are obtained from the subject's blood, spinal fluid, serum, cells, tissue or cellular organelles (see col. 2 lines 40-43). With regard to claim 62, Siman teaches the cellular organelle of mitochondria (as mitochondria are found in all cells by analyzing the blood, serum, spinal fluid, cells or tissue the mitochondria of those cells are inherently analyzed (see col. 2 lines 40-43).

5. Claims 56-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Niebroj-Dobosz et al. (*Acta Neruol Scand*, July 1999).

Niebroj-Dobosz et al. teach (claim 56) a method for identifying small molecules relevant to a nervous system disorder, comprising:

obtaining a small molecule profile of a subject suffering from a nervous system disorder (Glutamate, aspartate, glycine and GABA are amino acids which have the molecular weights of 147, 133, 75 and 105.13 Daltons, respectively, and therefore meet the claim limitation of small molecule which is defined in the specification as molecules with a molecular weight of less than 2000 Daltons (see p. 6 abstract); and

comparing the small molecule profile to a standard small molecule profile thereby, identifying the small molecules relevant to said nervous system disorder (see p. 6 abstract).

With regard to clam 57, Niebroj-Dobosz et al. teach the nervous system disorder is a neurogenerative disorder (see p. 6 abstract). With regard to claims 58 and 59, Niebroj-Dobosz et al. teach the nervous system disorder is Amyotrophic lateral sclerosis (see p. 6 abstract). With regard to claim 60, Niebroj-Dobosz et al. teach the subject is human (see p. 7 col. 1 lines1 under patients). With regard to claim 61, Niebroj-Dobosz et al. teach the small molecule profiles are obtained from the subjects blood, spinal fluid, serum, cells, tissue or cellular organelles (see p. 7 col. 1 lines1 under biochemical analysis). With regard to claim 62, Niebroj-Dobosz et al. teach the cellular organelle of mitochondria (as mitochondria are found in all cells by analyzing the blood, serum, spinal fluid, cells or tissue the mitochondria of those cells are inherently analyzed (see p. 7 col. 1 lines1 under biochemical analysis). With regard to claim 63, Niebroj-Dobosz et al. teach molecule profiles are obtained using HPLC (see p. 6 abstract). With regard to claim 64, Niebroj-Dobosz et al. teach a method for identifying small molecules relevant to amyotrophic lateral sclerosis, comprising:

obtaining a small molecule profile of a subject suffering from amyotrophic lateral sclerosis; and

comparing the small molecule profile to a standard small molecule profile thereby, identifying the small molecules relevant to amyotrophic lateral sclerosis (see p. 6 abstract).

With regard to claim 65, Niebroj-Dobosz et al. teach a method for identifying small molecules relevant to amyotrophic lateral sclerosis, comprising:

obtaining a small molecule profile of a subject suffering from amyotrophic lateral sclerosis using one or, HPLC and comparing the small molecule profile to a standard small molecule profile thereby, identifying the small molecules relevant to amyotrophic lateral sclerosis (see p. 6 abstract).

Summary

6. No claims are allowed.

Correspondence

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather G. Calamita whose telephone number is 571.272.2876 and whose e-mail address is heather.calamita@uspto.gov. However, the office cannot guarantee security through the e-mail system nor should official papers be transmitted through this route. The examiner can normally be reached on Monday through Thursday, 7:00 AM to 5:30 PM.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Gary Benzion can be reached at 571.272.0782.

Papers related to this application may be faxed to Group 1637 via the PTO Fax Center using the fax number 571.273.8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to 571.272.0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The

USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public. For more information about the PAIR system, see http://pair-direct.uspto.gov.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

hgc

GARY BENZION, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600